

✓
A3
1/4 Bd. Bureau
new

TM 10-205
=

LV
WAR DEPARTMENT

TECHNICAL MANUAL

MESS MANAGEMENT AND
TRAINING

July 6, 1942

100



MESS MANAGEMENT AND TRAINING

	Paragraphs
SECTION I. General.....	1- 2
II. Mess organization and administration.....	3-15
III. Mess personnel	16-18
IV. Rations.....	19-22
V. Inspection and storage of subsistence.....	23-32
VI. Mess operations.....	33-46
VII. Nutrition and menu planning.....	47-55
VIII. Food preparation and cooking.....	56-63
IX. Mess sanitation and personal hygiene.....	64-70
X. Training facilities of schools for bakers and cooks...	71-75
INDEX	Page 48

SECTION I

GENERAL

	Paragraph
Purpose.....	1
Scope.....	2

1. **Purpose.**—*a.* The purpose of this manual is to furnish a clear, practical, and concise source of information for officers responsible for the operation of troop messes, to implant in them a thorough knowledge of War Department policies and the established principles of mess management, and to induce a constructive attitude in all mess personnel.

b. Unsatisfactory messing conditions can frequently be traced to responsible officers who are not familiar with the messing problems encountered in all service situations and the procedure necessary to the solution of them.

c. Management and supervision of messes is a command responsibility and function. Commanders of armies, corps, divisions, brigades, regiments, battalions, companies, and similar units are responsible for the management and supervision of the messes under their command, and they will exercise direct control of all phases of mess operation. Every commanding officer should maintain constant close personal supervision of and interested familiarity with the operation of all messes under his command. When personal supervision and interest do not exist, the morale and physical fitness of the troops are

*This manual supersedes TM 10-205, April 1, 1940.

endangered. Appointment of a subordinate to the direct supervision of a mess or messes does not relieve the commanding officer of the responsibility of maintaining the physical fitness and morale of the troops under his command, whether in garrison or in the field.

d. Schools for bakers and cooks are maintained pursuant to AR 350-105 and 350-940 for the following purposes:

(1) To train mess officers, mess supervisors, mess sergeants, cooks, and bakers.

(2) To disseminate theoretical and practical information respecting the conduct of messes.

(3) To provide visiting mess supervisors whose services are available to the corps area commander to further the training of mess sergeants and cooks and to advise in the preparation, cooking, and serving of food, and elimination of waste.

(4) To provide traveling specialty teams, such as pastry bakers, meat cutters, field range instructors, etc., to render valuable service and theoretical as well as practical instruction in their special field in accordance with section X.

2. Scope.—See sections II to X, inclusive.

SECTION II

MESS ORGANIZATION AND ADMINISTRATION

	Paragraph
General.....	3
Mess equipment and supplies.....	4
Fuel, light, and water.....	5
Refuse and garbage disposal.....	6
White clothing and laundry.....	7
Garrison ration in effect.....	8
Field ration in effect.....	9
Ice issues.....	10
Determining number of rations due.....	11
Ration return.....	12
Ration savings.....	13
Ration certificate.....	14
Accounts and records.....	15

3. General.—*a.* The unit commander, upon being assigned a building or buildings for a mess at an established post, camp, or station will inspect the buildings concerned and all installations therein (Historical Record Property) prior to occupancy. He will then receipt for the buildings and the public property therein.

b. The mess officer of a newly activated company, battery, troop, or similar unit will organize the mess cadre that is provided by

higher authority in accordance with the Table of Organization pertaining to the unit. He will then obtain the mess equipment, supplies, and subsistence necessary to place the mess in operation.

4. Mess equipment and supplies.—*a.* Quartermaster supplies are issued to the Army on properly approved requisitions within the limits of allowances prescribed in Tables of Organization, Tables of Basic Allowances, Tables of Allowance (equipment for posts, camps, and stations), Army Regulations, War Department circulars, and other publications.

b. The requisitions (requests for supplies) are submitted by the unit commander concerned to the post, camp, or station quartermaster through his respective battalion, regimental, or similar unit supply officer. Requisition forms pertaining to messing are as follows:

(1) W. D., Q. M. C. Form No. 400 (Requisition for Supplies and Equipment, General, Kitchen Equipment, and Silverware).

(2) W. D., Q. M. C. Form No. 411 (Requisition and Receipt for Brooms, Brushes, Matches, Mops, Toilet Paper, Soap, etc.).

(3) W. D., Q. M. C. Form No. 414 (Requisition and Receipt for China and Glassware).

(4) Local approved forms for subsistence.

5. Fuel, light, and water.—In an established post, camp, or station, timely arrangements will be made by the unit commander with the post utility officer for the supplying of water, gas, and electric power and a check of existing installations prior to acceptance and operation. Representatives of the quartermaster must be contacted to arrange for deliveries of all types of fuel, including coal and wood, when gas installations are not available.

6. Refuse and garbage disposal.—The post, camp, or station quartermaster's representative, post police, or provost marshal (depending upon local policies in effect) will arrange for the disposal of all mess refuse and garbage.

7. White clothing and laundry.—*a.* White clothing, for organizations entitled thereto, will be requisitioned on W. D., Q. M. C. Form No. 409 (Requisition and Receipt for Clothing in Bulk), based on the allowances prescribed in Table of Allowances.

b. Arrangements will be made with the local quartermaster for the laundering of white clothing in accordance with local regulations.

8. Garrison ration in effect.—*a.* At posts, camps, or stations where the garrison ration is authorized, requisitions on local approved forms will be submitted to the quartermaster sales officer. Before submitting his subsistence requisition, the mess officer will familiarize himself with the subsistence price list, the policy in effect pertaining

to days of issue of subsistence articles, and the dates prior to issues on which requisitions will be submitted.

b. The requisition will be based on the strength of the organization and a menu covering a period of at least 10 days. For further reference to menu making, see section VII of this manual and chapter 2, TM 10-405.

9. Field ration in effect.—*a.* No requisition is required where the field ration is in effect.

b. Issue of the field ration is based on the organization strength and a menu previously prepared and approved by higher authority. The strength of the organization will be submitted on approved form through channels to the field commissary officer, who will make necessary issues to the organization of the components of the field ration menu. The dates of issue will be designated by the commanding officer of the post, camp, or station.

10. Ice issues.—Timely arrangements will be made with the post, camp, or station quartermaster for the delivery of ice to the mess. For reference to ice allowance accounts, etc., see AR 30-2280.

11. Determining number of rations due.—The daily average strength for rations is based on the number of men for whom the company is entitled to rations, and is found by dividing the total number of meals (breakfast, dinner, and supper) served in the company or similar unit by three, as shown by the figures and "Remarks" on the morning report. (See AR 345-400.)

12. Ration return.—A ration return is a requisition on the quartermaster for rations, submitted by the officer under whom persons entitled thereto are serving, and will be submitted in accordance with AR 30-2210.

13. Ration savings.—Expenditures of ration savings by organizations will be limited to those authorized by AR 30-2210 and AR 210-50. These funds will be accounted for under the provisions of AR 210-50.

14. Ration certificate.—A ration certificate is given to the commanding officer of an organization by the quartermaster upon closing the account as indicated in AR 30-2210.

15. Accounts and records.—*a. Rations.*—Definitions and explanations of the various rations used by the Army will be found in section IV.

(1) *Garrison ration.*—Mess accounts for an organization operating on the garrison ration are recorded daily on W. D., Q. M. C. Form No. 469 (Monthly Mess Account). The heading of this form is self-

explanatory (see sample form (insert at end of manual)). The value of the ration will be obtained from the quartermaster (sales officer) each month as shown on the price list of subsistence stores. Value of stock at the end of the previous month will be the actual value of all subsistence on hand, as shown by the inventory taken by the mess officer on the last day of the previous month. Daily entries to be made in columns 2 to 21, inclusive, are as follows:

Column No.

2. Under "Today," enter the number of men rationed with the unit as shown in the W. D., A. G. O. Form No. 1 (Morning Report). (See AR 345-400.) Under "To date," enter the total number of men rationed, in the current month, including today.
3. The total value of the rations for the day of entry is obtained by multiplying the value of the rations by the number of men rationed on the day of entry.
4. Daily allowance from company fund, if any, will be entered daily.
5. Income from boarders, when authorized, will be entered daily.
6. Total credit for the day will be the value of the rations, plus allowances from the company fund, plus income from boarders for the date of entry.
7. The total credit to date is the total credit for the current month, including today.
8. The entry under "Today" will be the purchases made from the commissary on the date of entry.
The entry under "To date" will be the total commissary purchases for the current month, including today.
9. This column is used in the same way as column 5 in recording post exchange purchases.
10. The entry under "Today" will be the purchases made from all sources not entered elsewhere on the date of entry.
The entry under "To date" will be the total purchases from all sources not entered elsewhere for the current month, including today.
11. This entry represents the total purchases entered in columns 8, 9, and 10, under "Today."
12. "Total purchases to date" are obtained by adding the amounts under "To date" in columns 8, 9, and 10.
13. When the total value of the rations (column 3) exceeds the purchases made from the commissary (column 8 under "Today") on the date of entry, the difference is posted in column 13.
14. When the purchases made from the commissary (column 8 under "Today") exceed the value of the ration on the date of entry (column 3), the difference is posted in column 14.
15. The entry in this column is the daily balancing of the entries posted in columns 13 and 14. It represents the difference between the totals of columns 13 and 14.
16. This entry is the financial standing of the mess. When the ration credits (column 7) exceed the purchases (column 12), the entry in this column is prefixed by a plus sign. When the purchases exceed the credits, the entry is prefixed by a minus sign.

17. This entry represents the value of stock on hand on the previous day plus all purchases made on the date of entry (column 11). On the first of the month, the value of stock on hand the previous day is the "Value of stock on hand at end of previous month."

In all later entries, the value of stock on hand on the previous day is taken from column 19.

18. This entry is the cost of food consumed on the date of entry.

19. The entry in this column is the value of stock in the supply room (column 17) minus the cost of the food consumed on the date of entry (column 18).

On days of inventory, this entry will be the actual value of the physical inventory as taken by the mess officer and entered on the back of Form No. 469.

20. This entry shows the daily increase or decrease between the balance of stock on hand (column 19) each day and the value of stock at end of previous month. A plus or minus sign is prefixed to the entry to indicate an increase or decrease.

21. This entry will show a daily combined gain or loss in the financial standing (column 16) plus the gain or loss in the stock on hand (column 20).

Inventories will be taken on the 10th, 20th, and last day of the month, and at such other times as directed. This inventory value will be entered in column 19 on the date taken and adjustments noted at the foot of Form No. 469, as illustrated on the sample form.

(2) *Filipino ration.*—The Filipino ration is accounted for in the same manner as the garrison ration.

(3) *Travel ration.*—The travel ration is issued in kind and no accountability is required after issue, except when a monetary allowance is prescribed in lieu of the coffee, milk, and sugar components. This monetary allowance is prescribed and accounted for under the provisions of AR 35-4520.

(4) *Field ration.*—(a) When the components of the field ration are delivered to the organization mess, accountability therefor is no longer required. This does not relieve the commander concerned of responsibility for the preservation and proper utilization of these components to the fullest extent. (See AR 30-2210.)

(b) The mess officer will check the amounts of ration components delivered with the menu requirements, as based on the estimated strength of his organization, to determine any probable over or short issues.

(c) Overages or shortages may result from changes in organization strength between the date the estimated strength was submitted and that on which the field ration menu components were delivered.

(d) In the event of overissues resulting from change of strength of the organization, subsequent issues will be decreased to offset the overage. Therefore, care must be exercised to hold these overages for use at a later date.

(e) In case of a serious shortage in the issue of field ration menu components resulting from increased strength between the date of estimate and the date of issue, additional ration components may be drawn from the field commissary and the strength return adjusted accordingly.

b. *Forced issues.*—Commanding officers may order forced issues of subsistence stores to prevent loss through deterioration. Debits and credits will be given on the ration savings account for the increased or decreased cost. For further information, see AR 30-2210.

SECTION III

MESS PERSONNEL

	Paragraph
General.....	16
Qualifications.....	17
Duties.....	18

16. General.—The importance of ideal messing conditions cannot be overemphasized. The first requisite is the selection of well-qualified mess personnel.

17. Qualifications.—a. (1) *Mess officer.*—A mess officer must be fully cognizant of the importance of his position in maintaining a high standard of morale and the physical fitness of the troops.

(2) He must be interested and familiar with all phases of mess operation, including nutritional requirements, inspection of subsistence, storage of foods, food preparation, method of cookery, mess sanitation, supervision of personnel, mess accounting, and the duties of his subordinates.

(3) The commanding officer who delegates the duty of mess officer to the least able of his junior officers has taken the first step toward breaking down the morale of his command. The mess officer who, under the press of other assignments, degrades the mess to the position of one of his minor functions is guilty of an error that will have serious repercussions.

b. *Mess sergeant.*—(1) The mess sergeant is a keyman in any organization. The selection of a well-qualified individual for this position is of great importance. When an experienced mess sergeant is not available and an individual has to be selected for the position, an experienced cook (preferably a graduate of a school for bakers and cooks) with leadership ability should be chosen. This method of selection will afford cooks an opportunity for advancement and contribute to the morale of the kitchen personnel. The selection at random of a noncommissioned officer as a mess sergeant will only detract from the efficiency of the mess operation.

(2) The mess sergeant must be a leader, familiar with all phases of cookery and have a thorough knowledge of the inspection and storage of foods. He must be well versed in the vital subjects of nutrition, menu making, and mess sanitation, and possess a working knowledge of mess accounts and records.

c. Cook.—(1) The cook of the organization is responsible for the actual preparation and cooking of the enlisted man's ration. He holds a responsible position, as the health and contentment of troops depend largely on the quality of the cooking in the mess. Good cooking contributes to economical mess operation and is vital to the welfare and morale of the troops.

(2) When selecting cooks for the organization mess, the individual's qualification must be given proper consideration. A good Army cook must possess initiative and be conscientious and reliable. He must have a working knowledge of the function of foods and a thorough understanding of the methods of food preparation and cookery. A good Army cook must be able to carry out instructions and direct the work of his assistant cooks and kitchen police.

(3) The first cook, or shift leader, must be able to prepare all dishes called for on the menu and direct the general kitchen operations.

(4) The second cook must be able to carry out the instructions of those appointed over him.

d. Kitchen police.—Kitchen police is an important military duty. Men detailed to it should not be selected from the most incompetent members of the unit. The duty of kitchen police should never be regarded by commanders as a punishment detail. The man who is inept at drill or other duties is not the man to place in the kitchen and be trusted with the health of the troops. Cooks do not have the time to be prodding the kitchen police at the expense of their more important work. The hours of kitchen police should be no longer, their holidays no shorter, and their standing in the organization no less than those of general duty men.

18. Duties.—*a. Mess officer.*—The mess officer is directly responsible to his immediate commanding officer for the operation of the mess. The commanding officer of a company, battery, troop or similar unit is not relieved of responsibility for the operation of the mess by appointing a subordinate as mess officer.

(1) The mess officer will obtain the required subsistence, equipment, and supplies necessary for the operation of the mess, and the feeding of the troops.

(2) He will inspect all subsistence received for quality and quantity. Only in emergencies will he delegate this responsibility to the mess sergeant.

(3) He will make frequent daily inspections of the mess. During these inspections he will see that—

(a) All subsistence is properly stored according to its perishable nature. (See sec. V.)

(b) The menu is being followed. Only authorized substitutions will be made.

(c) Correct methods of preparation, cookery, and serving are employed to avoid waste and preserve the nutritive value of foods. (See sec. VIII.)

(d) Left-overs are kept to the minimum and are utilized to the fullest extent.

(e) Accounts and records pertaining to the ration in effect are posted and accurately maintained at all times.

(f) Inventories pertaining to the mess are properly recorded.

(g) All mess equipment is properly maintained and kept in a good state of repair.

(h) All phases of mess sanitation are enforced at all times.

(4) The mess officer will encourage all mess personnel to further their training and efficiency at all times.

(5) The mess officer, assisted by the mess sergeant, prepares the menu when the garrison ration is in effect.

(6) An ideal mess will have additional mess personnel available in the organization at all times.

(7) The mess officer will frequently sample dishes to determine their palatability and attractiveness.

b. Mess sergeant.—(1) The mess sergeant is directly in charge of the detailed operation of the mess and responsible to the mess officer for it. He will supervise the work of the mess personnel in a manner to promote harmony and efficiency.

(2) He will supervise the actual preparation, cooking, and serving of the food.

(3) He is responsible for keeping the mess building, equipment, and area in an excellent sanitary condition at all times.

(4) He will organize the work in the mess, assigning such detailed duties to individuals working under his supervision as are necessary for successful operation.

(5) He will maintain order in the mess at all times.

(6) He will assist the mess officer in planning menus and keeping the necessary records and accounts.

(7) He will check appliances, equipment, etc., frequently, reporting any shortage and recommending all necessary repairs.

(8) All breakages will be promptly reported to the mess officer to enable him to establish responsibility therefor and to prepare the required Statement of Charges.

(9) He will take all steps necessary to insure the proper utilization of all food and to eliminate waste.

c. Cook.—(1) The cook will constantly bear in mind that the food he prepares is the ration of the troops, entrusted to him for its preparation and serving. He will personally prepare all dishes called for on the menu. He will take an interest in his duties and constantly endeavor to produce the best possible meals to promote the health, contentment, and pride of the organization.

(2) He will observe the rules of personal hygiene at all times. He will keep his kitchen and equipment clean and eliminate all methods of work that will cause waste.

(3) He will personally fire the ranges and see that there is an ample supply of fuel available at all times.

(4) During any authorized absence of the mess sergeant, he will assume the duties and responsibilities of that office.

(5) He will study the menu, plan his procedure and, before starting each task, will assemble the equipment and ingredients to increase his efficiency.

(6) Prior to closing the mess hall at night he will see that it is put in order, that all windows and doors are secured, lights extinguished, foods properly stored, that fuel is on hand, and that advance preparations have been made for the breakfast meal.

d. Kitchen police.—The kitchen police are under the direct supervision of the mess sergeant and cooks and will perform the following duties:

(1) They will assist in all tasks necessary to keep the entire mess hall and all utensils scrupulously clean at all times.

(2) They will assist the cooks in the preparation of foods prior to cooking to the extent of washing, peeling, and slicing vegetables, fruits, etc.

(3) They will assist in serving the food to the troops under the direct supervision of the mess sergeant.

(4) They will assist in the receiving and storage of subsistence and will perform such other duties in connection with the mess as may be directed.

e. Dining room orderly.—The dining room orderly is responsible to the mess sergeant for the cleanliness and arrangement of the dining room. He will set the tables with the necessary china and glassware,

silver and condiments and, under the supervision of the mess sergeant, will assist in the serving of the food.

SECTION IV

RATIONS

	Paragraph
Definition -----	19
Kinds -----	20
Handling -----	21
Distribution -----	22

19. Definition.—A ration is the allowance of food for the subsistence of one man for one day.

20. Kinds.—The Army uses the following kinds of rations, each intended for and adapted to special conditions of the service:

Garrison ration.

Filipino ration.

Travel ration.

Field ration.

a. Garrison ration.—(1) The garrison ration is that prescribed in time of peace for all persons entitled to a ration, except under specific conditions for which other rations are prescribed, and consists of the components listed in AR 30-2210.

(2) The garrison ration is issued in the form of a money credit and *not* in the form of food. The cost of the ration is computed monthly by each post, camp, or station quartermaster, based on the current local cost of the components listed in AR 30-2210.

(3) Each organization rationing troops at a station where the garrison ration is authorized is given a money credit in the amount of the total value of the ration for the number of men in the organization, and the mess may purchase any articles of food desired, within the provisions of AR 210-50.

(4) All purchases must be accurately controlled to enable the mess to operate within the allowances credited. Accounts will be closed and settled monthly. Any savings effected can be expended in subsequent months.

b. Filipino ration.—The Filipino ration is that prescribed in time of peace for the Philippine Scouts. Its components are listed in AR 30-2210. The Filipino ration is issued in the form of a money credit in the same manner as the garrison ration. In time of war, Philippine Scouts are issued the prescribed field ration.

c. Travel ration.—The travel ration is prescribed for troops traveling otherwise than by marching and separated from cooking facilities.

The ration is issued in kind and the components are listed in AR 30-2210.

d. Field ration.—The field ration is that prescribed for use only in time of war or national emergency when the garrison ration is not used. It is issued in kind and no ration savings are allowed. Its components and substitutes will be prescribed by the War Department or the commander of the field forces and will consist of the following:

(1) *Field ration A.*—This ration will correspond as nearly as practicable to the components or substitutes therefor of the garrison ration. This type of field ration will be issued as often as circumstances will permit.

(2) *Field ration B.*—This ration will correspond as nearly as practicable to the components of field ration A with the exception that nonperishable processed or canned products will replace items of a perishable nature.

(3) *Field ration C.*—This ration will consist of previously cooked or prepared food, packed in hermetically sealed cans, which may be eaten either hot or cold, and will consist of six cans per ration as follows:

3 cans containing a meat and vegetable component.

3 cans containing crackers, sugar, soluble coffee, and candy.

(4) *Field ration D.*—This ration will consist of three 4-ounce bars of concentrated chocolate.

(a) In time of war, types C and D field rations are to be issued only upon orders of the commander of the field forces. In time of peace, such of these types as are available may, for training purposes, be utilized when directed by proper authority.

(b) When deemed advisable, a combination of types C and D may constitute the field ration. This will normally consist of 2 cans of the meat and vegetable component, 2 cans of the crackers, sugar, soluble coffee and candy, and 2 each of the 4-ounce bars of concentrated chocolate.

(5) *Field ration K.*—This ration will consist of previously cooked or prepared foods, packaged in moistureproof containers, and will comprise three packages per ration as follows:

(a) *Breakfast unit.*

1 package K-1 biscuit.

1 package K-2 biscuit.

1 can veal and pork loaf.

1 package malted milk-dextrose and dextrose tablets, flavored.

5 grams soluble coffee.

3 tablets sugar.

1 stick chewing gum.

2 cigarettes.

(b) *Dinner unit.*

1 package K-1 biscuit.

1 package K-2 biscuit.

1 package cheese, processed American.

1 fruit bar.

3 tablets sugar.

1 package lemon juice powder.

1 stick chewing gum.

2 cigarettes.

(c) *Supper unit.*

1 package K-1 biscuit.

1 package K-2 biscuit.

1 can pork luncheon meat.

1 2-ounce bar field ration D.

1 package bouillon powder.

1 stick chewing gum.

2 cigarettes.

NOTE.—This ration has not been standardized. The components may be changed from time to time as dictated by experiment and test.

(6) Special rations are prescribed by the War Department for expeditionary forces in tropical and frigid climates and for troops operating in mountainous and desert regions.

21. Handling.—*a.* When troops are in the field, it is contemplated that rations will be issued daily. The ration cycle (breakfast, dinner, supper; or dinner, supper, breakfast) will be prescribed to meet the tactical situation. The principal reason for the daily issue of rations in the field is to avoid the overloading of organic transportation.

b. To keep the system of daily issues working satisfactorily requires the loyal and intelligent cooperation of all concerned.

22. Distribution.—*a.* The flow of rations through the Army division, regiment, and battalion supply is automatic. Frequently it is impossible to issue to companies or similar units the exact allowances due without breaking original packages. Conditions of weather, available shelter, enemy fire, blackouts, etc., make it extremely difficult to break packages and issue odd weights of such foods as sugar, coffee, flour, spices, etc. A system of debits and credits should be set up by the regimental or battalion supply officer to adjust overages and shortages resulting from issue of unbroken packages.

b. One company mess may be short of sugar and have an ample supply of coffee, while the reverse is true in another company. Com-

pany messes should cooperate with the regimental or battalion supply officer in making exchanges and adjustments between the organizations. Empty containers should be returned to the regimental or unit supply officer to facilitate future distribution.

c. When troops are serving at posts, camps, or in permanent or semipermanent locations, issue and handling of field rations are accomplished in a manner somewhat different from that which prevails in the field. At such locations, sufficient field rations for a week or 10 days probably would be issued at one time. When this occurs, company commanders must remember that the rations issued are the total allowance for that ration period; when they are gone, no more will be issued until the expiration of the period; therefore, control must be exercised to see that consumption is intelligently spread over the entire period. Inexperienced mess personnel are prone to the error of feeding heavily the first few days, with the result that the men are on short rations for the remainder of the ration period. The prescribed menu must be followed, and all foods must be properly prepared to avoid accumulation or waste of subsistence.

SECTION V

INSPECTION AND STORAGE OF SUBSISTENCE

	Paragraph
General	23
Canned foods.....	24
Fresh fruits and vegetables.....	25
Meats.....	26
Fish.....	27
Milk	28
Eggs	29
Dry stores.....	30
Dried fruits and vegetables.....	31
Storage of subsistence.....	32

23. General.—*a.* The quartermaster or his representative inspects all subsistence received by him. This does not relieve the mess officer of the responsibility of inspection when the food is received in the mess. In emergencies, in the absence of the mess officer, it becomes the duty of the mess sergeant to receive, inspect, receipt for, and properly store all food items received, unless other definite arrangements have been made by the organization commander. The mess officer should see that all food received in the mess is clean, sanitary, wholesome, in full weight and measure, and of the grade required by Government specifications. Food which is decomposed or rotten, insect infested (wormy), moldy, musty, etc., should not be accepted.

b. It is not expected that the mess officer be an expert in determining whether the grade is that required by Government specifications. Whenever it is apparent that food delivered is below the required grade, the matter should be reported to the organization commander.

c. Discrepancies in weight, measure, or count should be noted on the delivery order, shipping ticket, or invoice before the food is accepted. A few minutes spent in making the proper inspection of foods at the time of delivery will insure receipt of clean, sound, and wholesome food, and will result in the saving of many dollars.

24. Canned foods.—Spoilage of canned foods generally is indicated by swelled or leaking cans. The contents of these cans should never be served. Starchy vegetables sometimes spoil without swelling the can; but upon opening, the spoiled condition is unmistakable as the odor and taste are very disagreeable. For further reference to the inspection of canned foods, see section II, TM 10-210.

25. Fresh fruits and vegetables.—Standard grades for fresh fruits and vegetables were developed by the United States Department of Agriculture and are known as United States grades. Minimum quality requirements are clearly defined in the various grades. Fruits and vegetables graded at point of origin may not grade the same when received at destination because of deterioration or injury in transit. The following points should be considered in inspecting fresh fruits and vegetables:

a. Large-sized fruits and vegetables are not always the best quality. As vegetables mature they have a tendency to become woody or to develop a hollow condition.

b. Avoid commodities showing decay as they will deteriorate rapidly.

c. Distinguish between blemishes that affect appearance and those that affect eating quality. The amount of blemish that must be removed in preparation for table use is a determining factor in acceptance or rejection.

d. Fine appearance does not indicate fine quality, although the two are associated.

e. See that containers hold full measure.

f. For further reference, see section III, TM 10-210.

26. Meats.—Meats—beef, pork, lamb, mutton, veal, and poultry—that are slimy, foul smelling, or bruised, should not be accepted. Meats that have spoiled usually have an unmistakable odor. Surface slime results from the growth of bacteria on the surface of the meat and follows exposure to high temperatures and humidity. Surface slime is not always indicative of spoilage. Washing or slight trimming will usually remove the slime and the meat beneath the surface

is found to be sound. Sourness (spoilage) near the bone can be detected by the use of a steel trier which is inserted into the meat near the bone, and smelled as soon as it is withdrawn. A knife with a polished blade may be used for this purpose. Deep spoilage may also be detected by cutting the meat in two pieces and inspecting the cut surfaces. Surface mold on meats is not harmful. If any doubt exists as to the soundness of the meat, a qualified inspector should be consulted, preferably a member of the Veterinary Corps. For detailed information, see section XI, TM 10-210.

27. Fish.—Only strictly fresh fish should be accepted. Instructions for inspection of fish are contained in section XIV, TM 10-210, and in section III, chapter 1, TM 10-405.

28. Milk.—Fresh milk for Army use is delivered in glass bottles or fiber containers. Glass bottles are easily inspected for dirt, extent of cream line, and color of the milk. Bottles should be scrupulously clean and should be sound without any broken or chipped edges. Color of milk varies with breed of cattle and nature of feed. Quartermasters should make frequent checks on the quality of fresh milk delivered by having random samples tested for bacteria count and butter fat content. For further information on this subject, see section XII, TM 10-210.

29. Eggs.—Inspection of eggs includes determination of net weight and quality or grade. Cases need not be new, but they should be sound, clean, and free from stains and bad odors. Fillers and flats should be sound, clean, sweet, and free from soilage. The tare on eggs will vary from 11½ to 13 pounds per case. Specifications will prescribe net weight per case required during various months for various grades. See section XIII, TM 10-210.

30. Dry stores.—Inspection of dry stores such as sugar, flour, beans, coffee, rice cereal products, etc., will cover net weights, count, condition of package, etc. Prior storage under damp conditions will be indicated by lumps, mustiness, mold, and mildew. Flour and cereal products are subject to insect infestation. This condition is cause for rejection. Coffee should be in a closed, clean, dry container.

31. Dried fruits and vegetables.—Insects breed in stored dried fruits and vegetables; therefore, if insect-free products are stored in the same storeroom where infested products recently have been stored, the new products may become infested. The prevention of insect pests is a matter of good warehousing, and good preventive measures are—

- a. Piling or stacking on shelves or dunnage.
- b. Absolute cleanliness.

- c. Cool, dry, well-ventilated storage.
- d. Careful inspection of newly delivered stores.
- e. Frequent inspection of stock.
- f. Elimination of insects when found.

32. Storage of subsistence.—*a. General.*—Heat and humidity are the two major factors that contribute to food spoilage. Highly perishable foods such as meats, fish, butter, eggs, milk, etc., must be kept under refrigeration to retard spoilage.

b. Refrigeration.—(1) *General.*—(a) The purpose of mess refrigeration is to prevent spoilage for a short period of time and to chill certain foods to improve their palatability. Spoiled foods cannot be improved by refrigeration. Excessive moisture in a refrigerator is as harmful as dampness in any other type of storage.

(b) To keep highly perishable foods in good condition for 24 hours, it is necessary to store them at a temperature below 50° F. The ice cooled type of refrigerator is rarely as low as 50° F., and in hot weather the temperature in this type of refrigerator will go considerably above 50° F., resulting in probable spoilage in less than 24 hours.

(2) *Rules.*—(a) Store foods to allow ample circulation of cold air. Avoid piling of meats. Hang meats on hooks. Do not pack vegetables tight in the compartment. The coolest place in the refrigerator will be immediately below the refrigeration unit or ice compartment.

(b) Keep all doors closed tight at all times.

(c) Do not place hot leftovers or other foods in the refrigerator. Allow this type of food to obtain room temperature before placing it in the refrigerator. Remember that 1 pound of ice is melted to absorb 144 B. t. u.'s of heat (British thermal unit is amount of heat removed in lowering the temperature of 1 pound of water 1° F.).

(d) Keep the refrigerator clean by daily washing.

(e) Keep all drains clean and the drain trap in place to prevent an inrush of warm, stale air.

(f) Avoid storing foods that readily absorb odors, such as butter, fresh milk, etc., near those that give off odors, such as onions, raw or smoked fish, etc.

For further discussion of refrigeration see section III, chapter 1, TM 10-405, and section VII, TM 10-250.

c. Storeroom.—(1) The mess storeroom must be clean, light, cool, dry, well ventilated, free from rodents, insect infestation, and foreign odors. All articles should be neatly stored on shelves, dunnage, or in bins of clean substantial construction. The storage rule of using the old stock first will be applied. Items that are stacked

in bags and case lots should be placed on dunnage high enough off the floor to avoid the absorption of floor moisture, to facilitate cleaning, and to prevent the nesting of rodents and insects. All bulk containers for sugar, coffee, rice, flour, beans, and other dry stores should be of substantial construction and equipped with tight lids to avoid insect infestation and deterioration through exposure to the air.

(2) The storerooms should be kept clean at all times by frequent scrubbing, sweeping, dusting, and shifting of items to facilitate cleaning.

(3) Make frequent checks to detect deterioration of any stored items. Broken packages should be held to the minimum; i. e., spices, cereals, etc.

(4) Stores of food on hand in the mess must be held to a working minimum. The holding of excesses, over the working minimum, will contribute to a national food shortage. For example, if each of 15,000 Army messes had 400 pounds of sugar on hand, in excess of their immediate needs, 6,000,000 pounds of sugar would be drained from the nation's food supply.

d. Field storage.—(1) Facilities are not available in the field for the ideal storage of subsistence items. Improvised expedients must be made to meet local conditions and exigencies of the service. From available materials, expedients can be improvised in accordance with section VI, chapter 4, FM 21-10, and section VII, chapter 1, TM 10-405.

(2) All food storage in the field must be in as dry, cool, and clean a place as possible. Keep food stored off the ground, free from insect infestation, dust, exposure to direct sunlight, and the weather.

SECTION VI

MESS OPERATIONS

	Paragraph
General.....	33
Methods of serving.....	34
Care of ranges, cooking utensils, and appliances.....	35
Mess sanitation and personal hygiene.....	36
Disposal of refuse and garbage.....	37
Arrangement of field kitchen.....	38
Field mess sanitation.....	39
Army field range.....	40
Ice box.....	41
Water purification.....	42
Messing on troop trains.....	43
Serving on troop trains.....	44
Meal tickets.....	45
Messing on Army transports.....	46

33. General.—*a.* The mess sergeant, in accordance with such instructions as are issued by the mess officer, will see that the meals are served on time and will supervise the service in the dining room during the meal hours. He will not leave the mess area without permission of the mess officer, except in emergencies.

b. The importance of good mess furniture, appliances, and utensils cannot be overlooked. Every opportunity must be taken to facilitate the work of the mess personnel. Convenient work tables with utensils on racks close at hand are indispensable.

c. The kitchen range is the most important piece of equipment in the cook's trade. The Army range No. 5, built for burning soft coal, is very satisfactory when well operated. The improper operation of this range is a contributing factor to fuel wastage and depreciation of the range. The inexperienced cook may overfire this range by filling the firebox full of coal and leaving the dampers open. As a result the top is overheated and caves in, the water backs (water heating elements in the rear of the firebox) crack and cave in, and firebox liners burn through. See section VI, chapter 1, TM 10-405.

34. Methods of serving.—The method of messing troops will depend upon available facilities and the wishes of the commanding officer.

a. Cafeteria.—(1) When facilities permit, cafeteria service will provide the troops with hot food at minimum effort. When the cafeteria method is employed a great amount of waste and left-over foods can be avoided. Experience has shown that food consumption is lowered by the cafeteria method. The food items should be so arranged on the cafeteria counter that the meat dish will be the last of the hot items to be served. This will effect a saving in meat consumption and in the cost of feeding the troops, as meat constitutes approximately 50 percent of the cost of the ration.

(2) Additional china ware, vegetable dishes, platters, gravy boats, etc., which require much labor in washing and storing between meals, are not necessary for the cafeteria method of serving.

b. Family style.—The table method of serving food requires more labor in initial set-up, service during meals, and washing of dishes after meals. However, this type of service promotes a feeling of fellowship among the troops. It permits the entire group of men to enter the dining room at one time and avoids the discomfort of waiting outside the building during inclement weather.

c. A noncommissioned officer will be assigned to each table, regardless of the method of service, to maintain order, promote common table etiquette and insure an equable distribution of food.

35. Care of ranges, cooking utensils, and appliances.—For reference to the care of ranges, cooking utensils, and appliances, refer to the manufacturers' recommendations and section VI, chapter 1, and appendix, TM 10-405.

36. Mess sanitation and personal hygiene.—The mess, its equipment, appliances, and adjacent area must be kept scrupulously clean at all times. For instructions in the subject, refer to AR 40-205 and section IX of this manual.

37. Disposal of refuse and garbage.—All kitchen and mess refuse and garbage must be separated and disposed of in accordance with local regulations and methods. The elimination of all refuse and garbage is a major factor in the preservation of health. Flies breed and feed in filth. The refuse and garbage will be separated as outlined in the appendix, TM 10-405. This disposal of refuse and garbage will be in accordance with AR 40-205 and section IV, chapter 4, FM 21-10.

38. Arrangement of field kitchen.—*a.* The tactical situation will control the location of the field mess. The first requisite in the selection of the site for the field kitchen is the taking of natural cover to prevent observation of troop concentrations by the enemy. A well-drained area is desired.

b. The necessary essentials for field messing are the army field range with its equipment, tentage, and such other improvised expedients as the available resources and the initiative of the mess personnel will permit.

c. The arrangement of the mess tent, fly, or open area, will depend upon local conditions, but should provide for the highest efficiency of operation by eliminating unnecessary steps and effort for the cooks. Improvised work benches should be located adjacent to the range, so they can be used for serving tables. Stores should be located near the kitchen, protected from dust, insects, sunlight, and inclement weather. The cook will familiarize himself with the location of the stores to enable him to find any article during blackouts. He will learn to taste the various items used to enable him to cook during blackouts.

d. All possible precautions will be taken to prevent the exposure of cooking fires, lights, smoke and polished surface equipment to enemy observation. Such exposure may reveal the location of troop concentrations and supply dumps to the enemy.

e. The mess sergeant will acquaint himself with the location of the regimental, battalion, or similar unit ration dump to enable him to direct the ration detail over the route to and from the dump during blackouts. Teams of two men should carry the rations from the dump

to the mess by using shelter halves, blankets, or other means. The team will inform the cook as to the contents of their individual load in order to enable the cook to store the items properly as received.

39. Field mess sanitation.—Mess sanitation under field conditions is a difficult problem. All possible expedients will be employed to dispose of kitchen waste, refuse, and garbage to prevent the breeding of flies and the spread of disease. A slop pit and incinerator will be constructed when the tactical situation will permit, as described in section VII, chapter 1, TM 10-405. For further information on field mess sanitation and sterilization expedients for mess equipment, refer to section VI, chapter 4, FM 21-10.

40. Army field range.—*a.* The cooking in the field is centered around the field range. The importance of the proper care of this piece of field equipment cannot be overemphasized. The mess personnel (mess officer, mess sergeant, and cooks) must be thoroughly familiar with the operation, care, and maintenance of the field range. It is imperative that the cooks be trained in the operation of the range before going into the field. The field range and its equipment will not be used in the garrison except for training purposes. Use of the equipment in the garrison will result in its loss and deterioration, and when called upon for field use at a moment's notice the complete field range will not be in condition. For complete detailed instructions on the operation, care, and maintenance of the Army field ranges, see section VI, chapter 1, TM 10-405.

b. Store reserve gasoline for the M-1937 field range *away from open fire and food supplies. Gasoline is dangerous when not kept in its place.* Take the fire unit that is to be refilled *away from any burning unit.*

41. Ice box.—Improvised ice boxes can be made for field use. In this connection refer to section VII, chapter 1, TM 10-405.

42. Water purification.—The water sterilizing bag (Lister bag) is issued to all organizations primarily for the distribution of water previously purified. For methods of water purification, see FM 21-10.

43. Messing on troop trains.—*a. General.*—Orders directing travel will prescribe the ration to be used. Under certain conditions, the use of meal tickets or a monetary allowance in lieu of rations may be authorized.

b. Kitchen cars.—(1) A modified railway kitchen car, baggage car, or freight car may be provided, according to circumstances. Field ranges will be installed in such cars according to instructions contained in TM 10-405. Such additional equipment as is necessary to facilitate messing on the train will be obtained from the quartermaster, and arrangements made prior to departure for its transfer at

destination. Improvised work tables may be constructed from packing boxes.

(2) When the garrison ration is prescribed for troop train movements, menus will be planned, ration return submitted, rations drawn and stored prior to departure. Timely arrangements for the purchase en route of additional perishables will be made by contacting the carrier's representative.

(3) When cooking facilities are not provided and the garrison or travel ration is authorized, all "dry" subsistence except coffee can be stored in the smaller of the two washrooms of the sleeping car. Timely arrangements can be made with the dining car steward for the purchase of hot coffee. In the absence of a dining car on the train, arrangements can be made through the conductor for the purchase of hot coffee from commercial firms at stations or division points along the route.

44. Serving on troop trains.—The food must be carried and served to the troops, who remain seated in their respective sections of the cars. No attempt should be made to form a "cafeteria line," as the limited space and motion of the train will cause the spilling of food and general unsatisfactory condition. The troops in the car or cars farthest from the food source should be served first.

45. Meal tickets.—See AR 30-2215.

46. Messing on Army transports.—The stewards' department of the Army Transport Service is charged with the messing of troops aboard transports. Troops may be called upon for labor details in handling subsistence and policing mess areas.

SECTION VII

NUTRITION AND MENU PLANNING

	Paragraph
General.....	47
Functions of foods.....	48
Balanced meals and adequate diet.....	49
Food classification.....	50
Menu.....	51
Menu planning.....	52
How to make a menu.....	53
Sample menu for 1 day.....	54
Substitution lists.....	55

47. General.—All officers responsible for the operation of Army messes should be familiar with the simple fundamental rules of nutrition. These, when followed, will insure the proper feeding of an organization under all conditions of service. It is only with an adequate amount of properly combined foods that the good health and

effectiveness of an organization can be maintained. In the management of a mess, therefore, the selection of the kind, quality, and amount of food is the direct responsibility of the officer approving the menu.

48. Functions of foods.—*a.* Nutrition may be defined as the use of food by the body. The functions of foods in the body are to—

- (1) Yield energy for muscular movement and body warmth.
- (2) Build and repair the body.
- (3) Regulate body processes.

b. These functions are fulfilled by various foods in proportion to the content of their essential nutrients as shown in the following food chart.

FOOD CHART

Function	Classification		Foods
Furnish energy	Carbohydrates	Sugars	Sugars Syrups Molasses Fruits
		Starches	Flour and flour products Breads Crackers Cereals Potatoes and other starchy vegetables
	Fats	Butter Lard and lard substitutes Meat fats Oil (vegetable) Cream Nuts Cheese	
Build and repair the body	Proteins for muscles		Meat Glandular meats Fowl Fish Cheese Beans and peas Eggs Nuts Milk
	Minerals	Calcium for bones and teeth	Milk Cheese Vegetables (green)
		Phosphorus for bones and teeth	Glandular meats Meat Fowl Fish Milk Cheese Beans and peas Eggs Whole grain cereals and breads
		Iron for blood	Glandular meats Meat Fowl Oysters Eggs Vegetables (green) Dried fruits Whole grain cereals Whole wheat or enriched bread
Regulate body processes	Vitamins	A	Fish liver oil Liver Kidney Green and yellow vegetables
		(Thiamine (B ₁))	Pork Glandular meats Meat Potatoes Vegetables (green) Fruits Whole wheat or enriched bread Legumes
		B (Riboflavin (B ₂))	Butter Cream Eggs Milk Yellow cornmeal
		Nicotinic acid	Glandular meats Meat Milk Legumes Vegetables (green) Eggs
		C	Potatoes Fruits Vegetables (raw) Citrus fruits Melons Berries Pineapple
		D	Fish liver oil Liver Butter Eggs Milk (fortified)

49. Balanced meals and adequate diet.—Foods fulfill the functions outlined in paragraph 48 only when they are consumed in balanced combination and in adequate quantities.

a. Balance.—Balance in meals is attained when the menu is planned to include foods from each class of essential nutrients in the correct proportion. The classes of essential nutrients are—

Carbohydrates }
Fats } for energy.

Proteins—for building and repairing the body.

Minerals—for building bones, teeth, and blood and regulating body processes.

Vitamins—for regulating body processes.

Foods which contain these nutrients are shown in the food chart (par. 48). Suggestions to be noted and followed in making a balanced menu are given in paragraph 53 and examples of good menus in paragraph 54.

b. Adequacy.—Adequate diet is achieved when the total quantity of balanced food is sufficient to supply the energy requirements of men. Plan to include an adequate amount of each class of nutrients. In all cases special attention must be directed to the inclusion of foods containing vitamins and minerals since these are usually the least apparent, yet the most important, omissions. In this connection, it is to be remembered that foods suffer substantial losses in vitamins and minerals if storage and cooking are not properly accomplished. These considerations are of particular significance when prolonged subsistence depends on a restricted food supply.

c. Other considerations.—(1) *Water.*—Water constitutes by far the largest part of the body weight and is the basic means of transporting nutriment to the body cells as well as removing body wastes and regulating body warmth. It is to be remembered that water (as such, or in the form of milk, coffee, or other beverages) should be considered as a food essential to health. When profuse perspiration occurs, salt should be added to the water in accordance with section III, Circular No. 129, and section I, Circular No. 169, War Department, 1941, to prevent heat exhaustion.

(2) *Bulk.*—In order to aid in regulating bowel movements an essential element of the diet is bulk. An adequate quantity of fruits, vegetables, and fibrous meats included in the menu will give the necessary bulk.

50. Food classification.—*a.* The essential nutrients outlined above are contained in foods in varying amounts, depending on the composition of the foods. Foods are classified, therefore, according

to their functions as well as to the essential nutrients they contribute. Such classification aids in planning menus and in analyzing them for nutritional balance. A classification chart indicating the functions and nutritional contribution of many common foods is here made available for guidance and aid in planning balanced menus.

b. The following tabulation shows the types of foods with their major contributions of the essential nutrients. Adequate amounts of each type should be included every day.

Meat-----	PROTEIN, IRON, B VITAMINS, phosphorus, energy
Milk and dairy products--	PROTEIN, CALCIUM, VITAMIN B ₂ , phosphorus, vitamin A
Eggs-----	Protein, iron, phosphorus, vitamins A and D
Vegetables:	
Leafy green and yellow-----	VITAMINS A and C, iron, calcium
Potatoes-----	IRON, VITAMIN C, B VITAMINS
Dried peas, beans, etc-----	PROTEIN, CALCIUM, phosphorus, B vitamins
Fruits-----	VITAMIN C
Fats (butter, lard)-----	VITAMIN A, ENERGY
Cereals:	
Whole grain or enriched flour products-----	VITAMIN B, ENERGY, protein, iron, calcium
Refined flour products----	ENERGY, protein
Sugars-----	ENERGY

(1) Glandular meats such as liver are to be served often for A and B vitamins.

(2) Words in capitals indicate large quantity.

51. Menu.—a. A menu is a planned list of foods for a meal, a day, a week, or for a longer period.

b. A balanced menu is one which is planned to furnish all the nutritional elements in sufficient quantities as required by the body for its most efficient function.

52. Menu planning.—a. The first requisite in menu planning is the providing of a balanced diet. Any lack of balance in one or more meals should be corrected as early as practicable. The quantity of the foods consumed will depend largely upon the nature of the duty being performed by the troops. Troops in combat, at drill or performing other hard physical labor will require more food than troops performing clerical work.

b. A satisfactory menu is well-balanced, provides variety and pleasing food combination, and is within the authorized ration allowance.

c. There is no danger of insufficient foods being included in the menu of the Army under normal conditions and planning, although

under conditions such as combat there may be danger of insufficient health-protecting foods. This same danger may occur with the garrison or field ration when the food is improperly handled and cooked. Careless handling and cooking may cause partial or complete loss of vitamins and minerals naturally present and essential to the maintenance of good health.

d. Eating and food selection habits are formed early in the life of the individual and are all a matter of training, custom, and environment. Individuals responsible for menu planning must consider the nutritional requirements of the troops, the subsistence available, and the fact that the Army is a cosmopolitan group. The individuals responsible for menu planning will not permit their personal eating habits to affect the plan of the menu. The principles of menu planning are the same, regardless of the ration being used. All menus will be made in advance to permit intelligent purchase of future supplies and the utilization of those on hand.

53. How to make a menu.—The following instructions will serve as a guide in planning normal diet menus, especially when the garrison ration is in effect:

a. Know the foods essential for good nutrition.

b. Plan menus to include all classes of food.

c. Knowledge of the availability of fresh fruits and vegetables during each month permits menu plans to be made far in advance so that procurement is possible. There may have to be substitutions of one food for another, but these are not difficult and the balance of the meal need not be upset if substitution tables are followed.

d. First consider foods which are perishable—meat, fish, fresh milk, fresh fruits and vegetables, butter, eggs, etc.

e. If there is an insufficient quantity of one food for a meal, it may be combined with another. Example: beef and pork mixed for meat loaf; carrots and peas served together; carrots and cabbage in salad.

f. If the same kind of meat or vegetable must be served on the same day or on consecutive days, vary the method of cooking or serving.

g. Canned tomatoes are an excellent protective food. Use them often and be sure to include them when fresh vegetables are scarce. One raw vegetable daily is desirable.

h. Serve foods with contrasting qualities: crisp and soft, cold and hot, white and colored. This rule has much to do with making an appetizing menu.

i. Be sure that hot foods are not lukewarm. Nothing is more discouraging to the appetite than lukewarm soup and coffee.

j. Season foods well. Monotony can be avoided by careful seasoning.

54. Sample menu for 1 day.*a. Breakfast.*

- | | |
|-----------|--|
| Fruit | (1) Fruit—fresh, evaporated, or canned—is used |
| Cereal | for appetizing as well as nutritional rea- |
| Milk | sons. It is a welcome starter for the day, |
| Main dish | but should not be reserved for breakfast if |
| Bread | it would be more useful in improving other |
| Butter | meals. |
| Coffee | (2) Cereal is a fuel food and has the advantage |
| Sugar | of being a milk carrier. Serve hot or cold |
| | cereal, depending on the supply, the cli- |
| | mate, food habits of men, or need for |
| | variety. |
| | (3) The main dish may be ham, bacon, eggs, |
| | sausage, creamed dried beef, fried mush, |
| | French toast, hot cakes, or other satisfying |
| | breakfast dish. Do not have the same thing |
| | on the same day each week. If fried mush |
| | or French toast is on the menu, syrup or |
| | jelly should be served. |
| | (4) Vary bread as much as possible—toast, rolls, |
| | corn bread, hot cakes, biscuits, coffee cake, |
| | doughnuts, and pan bread are some sug- |
| | gestions. |

b. Dinner.

- | | |
|-------------------|--|
| Soup | (1) Soup may be served at either the noon or |
| Relish or salad | evening meal whichever needs the extra |
| Meat | nourishment. When a vegetable soup is |
| Potatoes | on the dinner menu, the salad may be |
| Vegetable (canned | omitted if desired. Soup is one means of |
| or fresh) | getting men to eat vegetables. |
| Dessert | (2) A relish may also take the place of salad |
| Bread | occasionally—raw carrot strips, young |
| Butter | onions, radishes, peppers, sliced cucumbers |
| Jam | and onions, and pickled beets are sugges- |
| Coffee | tions. |
| | (3) A leafy, green or yellow vegetable is valuable |
| | because of flavor, appearance, and vitamin |
| | content. <i>Do not overcook.</i> Season well. |
| | (4) Meat is always popular. The grade of meat |
| | purchased for the Army is excellent. |
| | Many good cuts are spoiled by poor cook- |

ing. Do not prepare too long in advance.
Serve hot.

- (5) Gravy or sauce is usually served with meat. Good gravy is smooth and not greasy. Serve hot.
- (6) Salads may be made from meat, vegetables, or fruits. Serve as cold and crisp as possible.
- (7) Dessert has a definite place in a menu because it gives a feeling of physical satisfaction. Many people crave sweets and are accustomed to having them at the end of the meal. Dessert adds calories and will round out a light meal. Serve lighter dessert with a heavy meal.

c. Supper.

Main dish
Relish or
salad
Vegetable
Bread
Butter or
jam
Dessert
Tea or
coffee

- (1) Meat may or may not be used, according to supplies on hand. This is a good time to combine meat and rice, macaroni and cheese, or to serve chili con carne, chop suey, creamed meat, thick chowders, baked beans, and the like. This meal must be heavy enough to keep the men from being hungry when they go to bed.
- (2) Utilize dinner left-overs when possible *in addition* to the regular supper menu. Some foods can be served without change while others may be combined with something else. Example: rice and stewed tomatoes; string beans and other vegetables in salad, etc.

55. Substitution lists.—*a. General.*—Study lists of available foods when making menus. Select foods that will give variety. Any food may be substituted for another in the following lists. Avoid serving two vegetables of similar flavor at the same meal.

b. Key to menu making (par. 54).

Breakfast—Select from (1), (2), (3), (4), (5), (8), and (9) below.

Dinner—Select from (1), (3), (4), (5), (6), (7), (8), (9), (10), (11), and (12) below.

Supper—Select from (1), (3), (4), (5), (6), (7), (8), (9), (10), (11), and (12) below.

(1) *Fruits.*

<i>Fresh</i>	<i>Dried</i>	<i>Canned</i>
Apples	Soak overnight well-covered with water. Bring fruit and water in which it was soaked slowly to the boiling point. Cook about 30 minutes. Add sugar if necessary.	Fruit juices
Apricots		Berries
Avocados		Figs
Bananas		Peaches
Berries		Prunes
Cantaloupes		Tomatoes
Cherries		
Cranberries		The less sweet juices are good for breakfast. Canned fruits are better for dinner or supper.
Grapefruit		
Grapes		
Limes		
Oranges		
Peaches		
Pears		
Pineapple		
Plums		
Prunes		
Rhubarb	Apples { May be used for pie or for sauce. (Stew with sliced lemon. Flavor with cinnamon.)	
Tangerines	Apricots { May be stewed with sliced lemon or oranges.	
Tomatoes	Prunes { May be stewed with whole cloves or cinnamon.	
Watermelon	Figs { Use in puddings, sauces, cakes, salads, pies.	
	Peaches {	
	Raisins {	

(2) *Cereals.*—Serve with fresh milk or with canned milk when fresh is not available. A small amount of salt and vanilla may be added to canned milk if desired.

(a) *Dry cereal.*—Assorted ready-to-eat cereals are convenient and offer variety.

(b) *Cooked cereal.*

Corn-meal mush	Cook thoroughly in boiling, salted water. Serve <i>hot</i> .
Farina	
Hominy grits	
Rice	
Rolled oats	
Whole wheat	

(3) *Eggs and other breakfast dishes.*—(a) Eggs.

1. Boiled; soft, medium or hard—with or without bacon.

2. Scrambled; plain or with minced {bacon
or
ham} or without fried bacon.

3. Fried with {bacon
ham} and/or potatoes {fried.
hashed brown.
creamed.
potato cakes.

or { hot hominy
grits.
fried rice
cakes.

4. Omelet.

Spanish.

Ham.

Jelly.

Bacon.

Cheese.

Chipped beef.

5. Creamed on toast.

6. Poached on toast.

(b) Fried bacon	} with or without potatoes	fried.
Ham		hashed brown.
Sausage		creamed.
		as potato cakes.
(c) Hot cakes with syrup with or without		pork.
		fried bacon.
		fried ham.

(d) Ham with cream gravy.

(e) French toast and syrup with frankfurters.
pork sausage.

(4) (a) *Breads.*

White	} Serve with butter, jam, jelly or marmalade. May be toasted.
Whole wheat	
Graham	
Rye	
Brown	
Corn bread	} Serve hot with butter.
Biscuits	
Muffins	
Toast	
French toast—	

(b) *Doughnuts.*

Cake dough.

Bread dough.

Sweet rolls.

Other sweet rolls.

(5) *Beverages.*

(a) Coffee— With canned milk (which is much like cream in coffee) and sugar.

It should be strong and not merely coffee-colored water.

Put sugar and canned milk on table.

- (b) Cocoa— Usually partially *sweetened* in cooking.
 Chocolate—Better if made with milk—canned milk will do.
 Serve once or twice a week.

- (c) Tea— Serve cold with lemon in hot weather.

(6) *Relishes.*

Beets (pickled).	Pickles:
Carrots (raw).	Dill.
Celery.	Mustard.
Olives.	Sour.
Onions:	Sweet.
Sliced.	
Young green.	

(7) *Soups.*—(a) *General.*—It is well to serve soup once a day in cold weather. Serve occasionally even in hot weather. Twice a day, now and then, is all right. Soups must always be served *boiling hot* and free from *grease*.

(b) *Varieties.*

Barley.	Mushroom.	Pepperpot.	Split pea.
Chicken.	Navy bean.	Puree of peas.	Tomato and rice.
Kidney bean.	Onion.	Puree of tomato.	Vegetable.
Lima bean.	Oyster stew.	Clam chowder.	Vegetable chowder.

(8) *Meats or equivalents.*—(a) *Beef.*

A la mode.	Hash.
Braised (pot roast).	Liver.
Braised with vegetables.	Loaf.
Chili con carne.	Oven roast.
Chop suey.	Patties.
Corned (baked, boiled, hash).	Pot pie.
Creamed.	Pot roast.
Croquettes.	Rolls.
Curried.	Short ribs.
Dried, chipped, creamed.	Spanish.
Fricassee.	Steak.
Goulash.	Stew.
Hamburg.	Turkish.

(b) *Beef heart.*

Baked.	Boiled.	Stuffed.
--------	---------	----------

(c) *Chicken.*

A la king.	Creamed.	Pot pie.
Broiled.	Fricassee.	Roast.
Casserole.	Fried.	Stew.
Chop suey.	Hash.	

(d) *Pork, fresh.*

Breaded	Chop suey.	Spare ribs.
tenderloin.	Pig's hocks.	Stuffed shoulder.
Chops.	Roast.	

(e) *Ham.*

Baked.	Broiled.	Fried.
Baked slices in milk.	Cold sliced.	Loaf.
Baked slices with apples.	Creamed.	Roast.
Boiled.	Croquettes.	Scalloped with potatoes.

(f) *Veal.*

Braised.	Roast.	Stuffed shoulder.
Cutlets.	Steak.	Birds.
Paprika.	Stew.	

(g) *Lamb.*

Braised.	Curry.	Stew.
Chops.	Roast.	Stuffed shoulder.

(h) *Miscellaneous dishes.*

Beans baked with bacon or pork (potatoes or other beans are not desirable in meal with baked beans).

Croquettes.

Frankfurters.

Macaroni with cheese.

Fish—baked, salad, scalloped, fried.

Stuffed peppers.

(9) *Irish potatoes.—(a) Method of preparation.*

Baked (in jackets or French baked).

Boiled (with or without jackets).

Creamed.

Fried:

French.

Hashed brown.

Lyonnaise.

Plain.

Mashed.

Parsleyed.

Roast browned.

Scalloped.

(b) *Substitutes.*

Black-eyed peas.

Dried lima beans.

Dried navy beans.

Kidney beans.

Macaroni.

Noodles.

Rice.

Spaghetti.

Sweetpotatoes:

Baked.

Boiled.

Candied.

(10) *Vegetables.*

Asparagus—buttered, creamed, salad.

Beans—buttered, creamed, salad:

Green string.

Lima.

Wax.

Beets—buttered, Harvard, pickled, salad.

Broccoli—buttered, creamed, au gratin.

Brussels sprouts—buttered, creamed.

Cabbage—boiled, buttered, fried, slaw.

Carrots—buttered, creamed, fried, glazed.

Cauliflower—buttered, creamed, crumbed, raw in salad.

Corn—creamed, with green 'peppers or tomatoes, corn pudding.

Cucumbers—sliced, raw, salad.

Eggplant—baked, fried.

Greens (kale, spinach, turnips, etc.)—buttered, creamed, raw in salad.

Lettuce—salad and garnish.

Okra—fried, with tomatoes, in soup.

Onions—boiled, creamed, fried, raw.

Parsnips—baked, buttered, fried.

Peas—buttered, creamed, with carrots, in salad.

Peppers—in salads, with tomatoes or corn.

Potatoes (see potato list).

Pumpkin—mashed.

Radishes—raw, as relish, or in salad.

Rutabaga—buttered, creamed, mashed, raw in salad.

Salsify—buttered, creamed.

Sauerkraut—baked, boiled.

Spinach—buttered, creamed, raw in salad.

Squash—baked, mashed.

Tomatoes—canned; buttered, scalloped, stewed, with green peppers and onions.

—fresh; fried, salad, sliced.

Turnips—buttered, creamed, mashed, mashed with potatoes.

(11) *Salads*.—(a) *General*.—*At least one a day* at dinner or supper is desirable. Salads are made from raw vegetables or fruit, although they may contain both cooked and raw vegetables and fruit. Do not cut into too small pieces. Make salads look attractive in a vegetable dish or on a platter. Always serve with a good dressing (cheese, French, mayonnaise, Thousand Island, or cooked dressing). It is usually better to *serve dressing separately* and let each man take as much as he wants. Nearly all salads are better with lettuce. If you have none, use sliced cabbage. *Two salads a day*, but not at the same meal, are not too many if they are good and different. Serve cold and crisp.

(b) *Varieties*.

Lettuce or other greens (leaf or head cut in quarters or sixths or separated into whole leaves).

Asparagus.

Beet.

Cabbage.

Carrot and pineapple gelatin.

Cole slaw.

Cauliflower.

Cucumber.

Cucumber, tomatoes.

Fruit salad (two or more fruits, fresh or canned).

Fruit and cream cheese.

Onion.

Green pepper.

Pineapple.

Pineapple and cheese.

String beans and beets.

Tomato aspic.

Vegetable (two or more).

(12) *Desserts*.

Cake—chocolate, fruit, jelly roll, plain, spice, sponge, etc.

Cookies—drop, ginger, molasses, oatmeal, spice.

Doughnuts and fritters.

Dumplings—apple, apricot, etc.

Fruit—baked, canned, fresh or stewed.

Ice cream.

Pie—apple, banana, berry, cream, custard, lemon, mince, peach, pumpkin, raisin, etc.

Puddings—bread, cornstarch, custard, gelatin, plum, rice, tapioca, etc.

SECTION VIII

FOOD PREPARATION AND COOKING

	Paragraph
General	56
Soups	57
Gravies and sauces	58
Meat cookery	59
Vegetable cookery	60
Salads and dressings	61
Desserts, sweet dough products, hot breads and rolls	62
Beverages—coffee, tea, cocoa	63

56. General.—*a.* The ration of the American soldier is the best in the world in quality, quantity, and variety of food delivered. The care and methods employed in the preparation and cooking of this food are the keys to its palatability and digestibility as served to the troops.

b. Cooking is the art of preparing food for human consumption. This includes the all-important phase of initial washing, cutting, peeling, etc., of the raw products, and the actual application of heat to the food, when necessary, to improve its palatability and digestibility and to destroy any disease germs that may be present.

c. One important rule to follow always is to serve hot foods hot, and cold foods cold. The cooking of food must not be completed until just a few minutes before serving in order to preserve its palatability and nutritive content.

d. The application of heat to foods hardens proteins, softens fibrous substances and, assisted by moisture, swells and bursts starch cells. These changes render the food more palatable and digestible. The quantity of the heat depends upon the required temperatures and the time of cooking, as well as the size, density, and other properties of the food being cooked.

e. Tables of temperatures and time of cooking foods are given in the appendix, TM 10-405, and in the various recipes in chapter 2 thereof.

57. Soups.—*a. General.*—Soups are served for their food value and as an appetizer. They permit the utilization of bones, vegetables.

and many left-overs, and are an economic asset to the mess in this respect. The item of soup is often omitted from the menu under normal circumstances due to poor management of the mess. Soups will be eaten by the men if they are attractively and conveniently served. In the cafeteria line, hand the enlisted man a bowl of soup as the first item. When table service is employed, place the soup directly on the tables. In the Army mess, as in civil life, the individual will not call for soup or go to a point in the mess hall to get it, but he will eat good soups when placed before him.

b. Full-bodied soups.—Purees and chowders are preferred by the troops.

Section IV, chapter 1, and chapter 2, TM 10-405, discuss soups, their kinds and preparation.

58. Gravies and sauces.—Good gravies are relished by most men, and contribute much to the success of a meal when properly prepared. For gravy and sauce recipes and methods of making, see chapter 2, TM 10-405.

59. Meat cookery.—*a.* Complete information covering the subject of meats, meat cutting, cuts and their use, and the thawing of frozen meats is contained in section III, chapter 1, TM 10-405.

b. The proper methods of meat cookery, carving, and serving are thoroughly discussed in section IV, chapter 1, TM 10-405.

60. Vegetable cookery.—*a.* The method of cooking vegetables will usually have a decided effect either good or bad upon their color, odor, flavor, and nutritive value. The preservation of the nutritive value is of prime importance. The loss of nutritive value through *overcooking* of all foods must be avoided. As a general rule, vegetables should be cooked only long enough to make them tender. Canned vegetables have been cooked during canning and need only be heated to the serving temperature, and seasoned. *Do not recook canned vegetables.*

b. The lack of consumption and resulting waste of many fresh vegetables can be traced directly to improper methods of cookery. Emphasis must be placed upon the utilization of vegetable cooking waters. The proper methods of vegetable cookery are thoroughly discussed in section IV, chapter 1, TM 10-405.

61. Salads and dressings.—*a.* Salads are essential to a well-balanced diet and are generally a combination of one or more fruits or vegetables with a dressing. The making and serving of salads in the mess afford a means of giving the troops a variety of these necessary fruits and vegetables. They must be prepared with care, and will not become monotonous if the mess sergeant and cooks use initiative and

ingenuity in making a variety of salads from any adaptable products available.

b. For methods of making and recipes, refer to section IV, chapter 1, and appendix, TM 10-405.

62. Desserts, sweet dough products, hot breads, and rolls.—

a. The majority of individuals enjoy an added sweet in the form of pies, cakes, sweet rolls, custards, puddings, etc. This added sweet, when served in an attractive form, increases the nutritional intake of the individual as well as adding attractiveness to the meal.

b. The frequent serving of attractive desserts, pastries, and rolls in a mess is an important step in maintaining excellent troop morale. Frequent serving of plain canned fruits under normal conditions is an indication of lack of initiative on the part of the mess personnel, although under adverse conditions this practice is permissible.

c. Recipes, with methods of procedure, are listed in the index to section II, chapter 2, TM 10-405, covering desserts, sweet dough products, hot breads, and rolls.

63. Beverages—Coffee, tea, cocoa.—*a.* The success of a meal, to the coffee drinker, depends upon the quality of the beverage served.

(1) Making good coffee with proper flavor, aroma, and body or "cup quality" is an art that must be mastered by the Army cook.

(2) The use of fresh roasted and ground coffee is the first requisite of good coffee making. The amount of ground coffee on hand should be limited to the immediate needs of the mess and must be stored in a dry, airtight container to avoid the loss of the flavor and aroma.

(3) The coffee-making utensils must be kept scrupulously clean at all times to prevent bitter and off flavors. These utensils should not be washed with soap and water, but should be scoured after each use to remove all film and oils. Special attention should be given to the faucets and other fittings on urns, boilers, etc., in which coffee is made.

b. Recipes and methods of making coffee, tea, and cocoa are fully discussed in section IV, chapter 1, and in chapter 2, TM 10-405.

SECTION IX

MESS SANITATION AND PERSONAL HYGIENE

	Paragraph
General.....	64
Control measures.....	65
Food handlers.....	66
Personal hygiene.....	67
Mess building.....	68
Cleansing of dishes and utensils.....	69
Mess area.....	70

64. General.—The intestinal diseases, as a group, are transmitted from person to person by food and water. Infective agents are disseminated in the excreta of cases or carriers.

65. Control measures.—The control of intestinal diseases is based on the control of environmental conditions with a view to preventing the transmission of the causal organisms by water and food. General measures for control of intestinal diseases include water purification, food protection and control, waste disposal, and control of houseflies.

66. Food handlers.—*a.* Mess officers, under whose supervision permanent food handlers may be employed, are responsible that such persons conform to the provisions regarding physical examinations provided in AR 40-205.

b. They will cause permanent food handlers in whom they notice signs or symptoms of any communicable disease to report to the surgeon. The unit commander will report to the surgeon, in writing, the name or names of prospective permanent food handlers under his jurisdiction. The surgeon will then take the necessary steps to have these men examined. The results of this examination will be reported to the unit commander and this report will be posted in the mess. Those found unsuitable for the work will be relieved immediately.

67. Personal hygiene.—*a.* It is the responsibility of the organization commander to instruct mess personnel in the ordinary rules of sanitation. He may call upon medical personnel for assistance in this instruction.

b. Food handlers, working in messes, will keep themselves scrupulously clean at all times. Those working in the preparation and serving of food will wear clean clothing, preferably white, at all times. During hot weather white undershirts are permissible, provided they are not the sleeveless "athletic" type. The undershirt must have sleeves long enough to cover the upper arm. Fatigue clothing should be worn while performing particularly dirty work, such as scrubbing floors or handling garbage, but not while assisting in the preparation and serving of the food.

c. Close supervision is necessary to insure that food handlers bathe daily, wear clean clothing, keep their hair cut short and, when possible, covered with a hat or cap.

d. Food handlers will habitually wash their hands and clean their fingernails at frequent intervals. Hand brushes and nail files should be kept convenient to the sinks. Particular attention will be given to the washing of hands and cleaning of fingernails after visits to a water closet or latrine.

e. Food handlers with colds should be isolated immediately to prevent the spread of respiratory diseases.

68. Mess building.—When mess buildings are provided, they will be properly screened during fly season and special efforts will be made to insure that screen doors and windows fit properly and that the former close automatically. Screen doors must not be allowed to stand open. The building should be properly and adequately lighted and ventilated. Special attention must be given to the cleaning of floors as these, unless made of impervious materials, will become grease-soaked, dirty and unsightly. Avoid flushing wood floors as this will cause the flooring to swell and buckle. Scrub small areas at a time with hot soapy water. Remove the scrub water with a mop which is frequently rinsed in clean hot water. Thoroughly dry-mop and allow the floor to air-dry before permitting traffic over it. Ice boxes or refrigerators, shelving, appliances, dunnage, etc., will be kept elevated at such a height above the floor as will permit cleansing and inspection underneath. Foot scrapers and mats will be provided at all entrances to mess buildings.

69. Cleansing of dishes and utensils.—The utmost attention must be given to the danger of the spread of communicable diseases through the media of dishes and kitchen utensils. The following methods will apply: -

a. When it is practicable to assemble the mess equipment of a company or detachment, or when dishes other than the mess equipment are used, all such equipment or dishes will be thoroughly washed and disinfected immediately after each meal by one of the following methods:

(1) By dishwashing machines in which the washing period is not less than 40 seconds, with the temperature of the water held at 165° F. or higher. This should be followed by rinsing for 20 seconds with the water at a temperature of not less than 180° F. Use a commercial dishwashing machine compound. Soap will gum the inside of the machine and is unsatisfactory for machine use.

(2) In messes where dishwashing machines are not available, the dishes will be thoroughly washed and then carefully rinsed in hot water. Following this they will be immersed in boiling water for at least 1 minute and then removed and allowed to air-dry.

(3) In the event that suitable and adequate amounts of hot water cannot be obtained to carry out the provisions of (1) or (2) above, the following procedure may be used: Dishes having been cleaned by washing, and rinsed in hot water to remove the soap or detergent,

should be immersed for not less than 2 minutes in a chlorine solution containing at least 50 parts per million of free chlorine. Finally, the dishes should be removed from the chlorine solution, rinsed with hot water and then allowed to air-dry. A satisfactory chlorine solution for disinfection of dishes can be made by dissolving 1 ounce of grade A calcium hypochlorite (60 to 70 percent available chlorine) in 25 gallons of water.

b. Always air-dry dishes and kitchen utensils. Do not use dish towels.

70. Mess area.—a. Garbage stands.—(1) In semipermanent camps, garbage stands must be installed adjacent to the kitchens. The best garbage stands are built in the form of a solid concrete block with a center core of stone and earth, and with an apron of 12 to 18 inches of concrete at the base. In height, the stand may be from 1 foot to 44 inches. The higher stands will have to be supplied with steps, but are at the level of truck floors so as to facilitate can transfers. When concrete is not available, wood stands of substantial construction should be built with the flooring strips separated at least 1 inch, to prevent the retention of organic matter. Use only tight-fitting lids on the cans and do not screen the stand, as a screened stand is no more than a large fly trap, difficult to clean. Do not use solid wood platforms such as old tent floors, etc.

(2) Cans should be marked to indicate the nature of the refuse to be placed in them and all personnel should be instructed to separate properly all waste prior to placing it in the cans. (See par. 15, appendix, TM 10-405.)

(3) The garbage stand area must be well-drained and thoroughly policed at frequent daily intervals to avoid soil contamination and fly breeding places adjacent thereto.

(4) The policing of the mess area, including frequent scrubbing of the garbage stand, is the duty of the kitchen police, under the supervision of the mess sergeant.

(5) To conserve can space and eliminate future mosquito breeding places, all tin cans should be completely mashed prior to their disposal.

(6) In a semipermanent camp or bivouac it will become necessary for mess personnel to improvise methods of heating water and disposing of liquid kitchen waste, garbage, and rubbish.

(7) A water-heating unit is provided with the gasoline-fired M1937 field range. When the Army field ranges Nos. 1 and 2 cooking out-

fits (pack, artillery, or Philippine Scout) are used, improvised water heating measures must be provided. Water-heating expedients for mess kit washing are described in paragraph 41, FM 21-10.

(8) Detailed instructions covering disposal of kitchen waste are covered in section IV, chapter 4, FM 21-10.

b. Insect control.—(1) *Flies.*—Prevention of fly breeding is the most effective part of a fly-control campaign. Constant vigilance is necessary. Complete detailed instructions are given in section V, chapter 4, FM 21-10, on the control and elimination of flies, including larvicides, poisons, sprays, flypaper, wire, fly traps, baits, and the care and location of traps.

(2) *Roaches and ants.*—Roaches and ants are not transmitting agencies for insect-borne diseases. They are, however, serious nuisances in messes and may transmit intestinal diseases by contamination of food. For control measures, refer to paragraph 75, FM 21-10.

SECTION X

TRAINING FACILITIES OF SCHOOLS FOR BAKERS AND COOKS

	Paragraph
General.....	71
Mission.....	72
Objectives.....	73
Special duties.....	74
Students.....	75

71. General.—Schools for bakers and cooks are established in each corps area and department and in such other places as directed by the War Department. The corps area school is composed of the parent school and such branches or subschools as may be required to meet the training requirements of the corps area.

72. Mission.—The mission of the schools for bakers and cooks is to train selected officers and enlisted men of the Army of the United States in one or more of the following subjects:

- Theory and practice of cooking.
- Theory and practice of baking.
- Mess management, supervision, and inspection.
- Theory and practice of pastry baking.

73. Objectives.—The objectives of the schools for bakers and cooks are—

- To secure the maximum benefit from the ration through its intelligent utilization by properly trained personnel.

b. To train officers in all subjects necessary for them to become—

- (1) Proficient mess officers, menu planners and mess supervisors.
- (2) Proficient instructors in mess management in troop schools.
- (3) Commandants and assistant commandants, schools for bakers and cooks.

(4) Commanding officers of bakery companies and post bakery officers.

c. To train enlisted men in—

- (1) The elements of nutrition.
- (2) Theory and practice of baking and cooking, garrison and field.
- (3) Mess management and menu planning.
- (4) Use and repair of equipment and expedients.

74. Special duties.—*a.* The school for bakers and cooks will assemble theoretical and practical instructional materials and facilities for the local troop school courses and for such other troop schools as may be directed by the corps area commander. This instructional material will include recipes, helpful hints and methods, menus, training schedules, courses for troop schools, classroom suggestions, etc.

b. The parent school for bakers and cooks will provide traveling specialty teams to demonstrate their subject in the subschools and such troop schools as may be directed by the corps area commander. These specialty teams are—

Mess supervisors and inspectors.

Field range instructors.

Meat-cutting specialists.

Pastry specialists.

These specialty teams will demonstrate the latest approved methods, offer instructional suggestions, and when called upon will render reports of messing conditions to the corps area commander.

75. Students.—*a.* The commander who has trained reserve mess personnel will not find his mess organization disrupted by the illness, transfer, or discharge of any one or more individuals. These trained reserves will be available during expansions to form cadres and replace personnel in the mess.

b. In selecting students to attend a school for bakers and cooks, select the most capable and best qualified men, but do not expect to receive a chef from the school when an inept, unreliable, and disinterested individual was originally sent to the school.

c. For further information on schools for bakers and cooks refer to AR 350-940.

INDEX

	Paragraph	Page
Ants.....	70	41
Appliances.....	35	20
Army field range.....	40	21
Army transports.....	46	22
Beans.....	30	16
Beverages.....	55, 63	30, 37
Breads.....	55, 62	30, 37
Breakfast menu, sample.....	54	27
Breakfast unit.....	20	12
Buildings.....	68	39
Cafeteria, serving.....	34	19
Canned foods.....	24	15
Cereal products, rice.....	30, 55	16, 29
Clothing, white.....	7	3
Cocoa.....	63	37
Coffee.....	30, 63	16, 37
Control measures in sanitation.....	65	38
Cooks.....	17, 18	8, 10
Desserts.....	55, 62	34, 37
Diet, adequate.....	49	24
Dining room orderly.....	18	10
Dinner menus, sample.....	54	27
Dinner unit.....	20	13
Dishes.....	69	39
Dry stores.....	30	16
Duties, personnel.....	18	8
Eggs.....	29, 55	16, 29
Equipment.....	4	3
Family style, serving.....	34	19
Field—		
Kitchen.....	38	20
Ration.....	9	4
Storage.....	32	18
Filipino rations.....	15, 20	6, 11
Fish.....	27	16
Flies.....	70	41
Flour.....	30	16
Food:		
Canned.....	24	15
Classification.....	50	24
Functions.....	48	23
Handlers.....	66	38
Preparation and cooking.....	56-63	35
Substitution list.....	55	28

INDEX

	Paragraph	Page
Fruit:		
Dried	31	16
Fresh	25	15
List	55	28
Fuel	5	3
Function of foods	48	23
Garbage, disposal	6, 37	3, 20
Garbage stands	70	40
Garrison ration	8	3
Gravies	58	36
Handling rations	21	13
Hygiene, personal	67	37
Ice box	41	21
Ice issue	10	4
Insect control	70	41
Inspection of subsistence	23-31	14
Issues, forced	15	7
Kitchen, field	38	20
Kitchen cars	43	21
Kitchen police	17, 18	8, 10
Laundry, white clothing	7	3
Light	5	3
Meal tickets	45	22
Meals, balanced	49	24
Meat cookery	59	36
Meat equivalents	55	31
Meats	26, 55	15, 31
Menu:		
Definition	51	25
Planning	52, 53	25, 26
Sample, for 1 day	54	27
Substitution list	55	28
Methods of serving	34	19
Milk	28	16
Nutrition and menu planning	47-55	22
Officer, mess	17, 18	7, 8
Operations	33-46	18
Orderly, dining room	18	10
Personal hygiene	67	38
Personnel:		
Duties	18	8
Importance	16	7
Qualifications	17	7

INDEX

Potatoes:	Paragraph	Page
Irish.....	55	32
Substitutes.....	55	33
Ranges.....	35, 40	20, 21
Rations:		
Breakfast unit.....	20	12
Certificate.....	14	4
Distribution.....	22	13
Determining number due.....	11	4
Dinner unit.....	20	13
Field.....	9, 15, 20	4, 6, 11
Filipino.....	15, 20	6, 11
Forced issues.....	15	7
Garrison.....	8, 15, 20	3, 4, 11
Handling.....	21	13
Return.....	12	4
Savings.....	13	4
Supper unit.....	20	13
Travel.....	15, 20	6, 11
Refrigeration.....	32	17
Refuse, disposal.....	6, 37	3, 20
Relishes.....	55	31
Rice cereal products.....	30	16
Roaches.....	70	41
Rolls.....	62	37
Salads.....	55	34
Sanitation.....	36, 39, 64-70	20, 21, 37
Sauces.....	58	36
Schools:		
Mission.....	72	41
Objectives.....	73	41
Special duties.....	74	42
Students.....	75	42
Sergeant, mess.....	17, 18	7, 9
Serving, methods.....	34	19
Soups.....	55, 57	31, 35
Storage of subsistence.....	32	17
Substitution lists, foods.....	55	28
Sugar.....	30	16
Supper, unit.....	20	13
Supplies.....	4	3
Tea.....	63	37
Tickets, meal.....	45	22
Training facilities.....	71-75	41
Transports, Army.....	46	22
Travel rations.....	15, 20	6, 11
Troop trains:		
Messing.....	43	21
Serving.....	44	22

INDEX

Utensils:	Paragraph	Page
Cleaning.....	69	39
Cooking.....	35	20
Vegetables:		
Cookery.....	60	36
Dried.....	31	16
Fresh.....	25	15
List.....	55	33
Water.....	5	3
Water purification.....	42	21

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

J. A. ULIO,
Major General,
The Adjutant General.

DISTRIBUTION:

B and H 8 (5); B (2); R 1-8, 10, 17-19 (5); Bn 1 (3), 2-11,
17-19 (2); C 2-11, 17-19 (3).

(For explanation of symbols see FM 21-6.)

MESS MANAGEMENT AND TRAINING

U.S. GOVERNMENT
PRINTING OFFICE
WASHINGTON, D. C. 20540

MONTHLY MESS ACCOUNT OF Company C 501st Infantry MONTH March YEAR 19 40

Value of Ration, \$ 0.4500 Allowance from Company Fund for Month, \$ None, for Day, \$ None Value of Stock at End of Previous Month, \$ 250.00

1	2	3		4	5	6	7	8		9		10		11	12	13	14	15	16	17	18	19	20	21	
		NUMBER MEN RATIONED	VALUE OF RATION FOR THE DAY					TOTAL CREDIT FOR THE DAY	TOTAL DEBIT FOR THE DAY	TOTAL BALANCE TO DATE	TOTAL BALANCE TO DATE	TOTAL BALANCE TO DATE	TOTAL BALANCE TO DATE												TOTAL BALANCE TO DATE
		Today	To date					Today	To date	Today	To date	Today	To date												
1	200	200	50 00		4 75	94 75	94 75	100 00	100 00			43 90	43 90	143 90	143 90		10 00	- 10 00	- 49 15	393 90	90 00	303 90	+ 53 90	4 75	
2	195	395	87 75		4 50	92 25	187 00	100 00	100 00			35 00	78 90	35 00	178 90	87 75		+ 77 75	+ 8 10	338 90	93 50	245 40	- 4 60	+ 3 50	
3	197	592	88 65		4 50	93 15	280 15	100 00	100 00			30 50	109 40	30 50	209 40	88 65		+166 40	+ 70 75	275 90	97 00	178 90	- 71 10	- 35	
4																									
5																									
6																									
7																									
8																									
9																									
10								350 00	450 00																
11																									
12																									
13																									
14																									
15																									
16																									
17																									
18																									
19																									
20																									
21																									
22																									
23																									
24																									
25																									
26																									
27																									
28																									
29																									
30																									

* The entry made in column No. 19, on the 10th, 20th and last day of the month is the actual physical inventory value. Adjustments are made in the space below.

March 31

I certify that the above is correct.

March 31

19 40

INVENTORY ADJUSTMENTS		10th	20th	Last Day
Physical Inventory value	1			
Column 17 minus 18	2			
Difference GAIN:	3			
LOSS:	4			
Standing of Mess per column 21	5			
Corrected standing	6			

John Doe

Mess Sergeant.

April 1

19 40

A. M. Jones, 1st Lt., 501st Inf.

Officer in charge of Mess.

Audited:

1-4012

Value of stock on hand at end of present month, . . . \$

Value of stock on hand at end of previous month, . . . \$

Increase—Decrease—in value of stock, . . . \$

Standing of mess on last day of month, . . . \$

Gain—Loss—in mess for month, . . . \$

[illegible]

ADDITIONAL ARTICLES NOT LISTED ABOVE WILL BE ENTERED BELOW

[illegible]

2-029

